This plan was adopted by Sir Henry Bessemer, a half century ago, and with, as he thought, excellent results; but no one knows precisely to what extent the reduction of resistance occurs. The Bessemer train seems to have been a more perfect illustration of the principle of construction proposed than is the modern example.

A speed of 78 miles an hour is reported from Baltimore; but this is, of course, little to the purpose. The same weight of train could probably have been forced up to the same speed by a plucky engineer if constructed in the usual way. In fact, speeds of equal and greater magnitude are, and have for years been, made on the East and West Coast Railways of Great Britain and the record is held in our own country at above 100 miles an hour with the common form of train. What is wanted is an accurate comparison, by experts, of resistances at equal speeds of the ordinary train and of the same size and weight of train encased with the cigar-shaped shell devised by Bessemer. Obviously, the more perfectly the cylindrical spindle is approached in the exterior conformation of the train, the less will be the air-resistance. This, at high speeds now coming to be not unusual, will no doubt prove of real value if the improvement of Bessemer can be effected without too much loss of comfort, convenience and safety. Bessemer fitted his engine with a conoidal 'bow,' as the seaman would call it, and also coned the rear of the train, as well as providing against breaks between adjacent cars. The train was fairly cylindrical. He ran it at enormous speeds, for the time, until it was finally 'ditched.'

R. H. Thurston.

CURRENT NOTES ON PHYSIOGRAPHY.

TOPOGRAPHIC TERMS.

H. M. Wilson, of the U. S. Geological Survey, has compiled a very useful 'Dictionary of Topographic Forms' (*Bull. Amer. Geogr. Soc.*, xxxii, 1900, 32–41), containing definitions of some 260 words, and 'intended to include all those terms employed popularly or technically in the United States to designate the component parts of the surface of the earth.' Besides a majority of English words, there are many taken from Spanish and French, and a few from other languages, making an interesting and characteristic polyglot vocabulary that has naturally grown up in different parts of the country. The definitions are terse and appropriate in nearly all cases. Escarpment is very properly limited to 'an extended line of cliffs or bluffs,' instead of being allowed to include the body of an unsymmetrical ridge, as is the practice of some English writers. Interfluve is of relatively new coinage, equivalent to doab of northern India, meaning 'the upland separating two streams having approximately parallel course.' The printer seems to have suppressed a few words, such as 'the low alluvial land about,' at the beginning of the definition of delta which reads 'the mouth of a river which is divided down stream into several distributaries.' Bottom, as well as bottom land, should be defined according to its use in the Southern States, as a narrow flood plain. Cascade is not 'a short, rocky declivity in a stream bed,' but the dashing water on such a declivity. Upland might advisedly be used for surfaces intermediate in altitude between lowland and highland, instead of serving as a synonym for highland. Landslide deserves definition in the active sense of a sliding mass, as well as in the passive sense of a mass that has slid. Several words have a more general use than is indicated; for example, dome and meadow are well known in the east as well as in the west. Malpais is perhaps by accident referred to French instead of to Spanish origin.

It is to be hoped that geographers in different parts of the country may contribute supplements to this fundamental list, and that it may be republished in more extended form in a year or two. Adjectives and perhaps verbs also might then be added to the nouns that now appear alone. The following terms are offered for consideration, some being taken from Whitney's 'Names and Places' (1888):—Slough, towhead, ford, reach (used in Wilson's definitions, but not defined), meander, bend (perhaps kink also, from Alaska), narrows, shut-in (Mo.), dismal (N. C.), barrens (Tenn.), glen (N. Y.), intervale (N. H.), falls (in the Maryland sense of a cascading stream), river (in the Florida sense of a

'long-shore lagoon), banks (in the N. C. sense of a sand reef, and also in the fisherman's sense of fishing grounds on a shallow sea floor) whaleback and horseback (Me.). The list might be extended still further.

MORAINES OF SOUTH DAKOTA.

THE account of the 'Moraines of southeastern South Dakota and their attendant deposits' by Todd (U. S. Geol. Surv., Bull. 158, 1899) is another example of those remarkable correlations between glacial action and existing topography by which so much light has been thrown on modern physiographic study in recent years. The outer (Altamont) moraine marks the border of an irregularly lobate glacier lying between Missouri and Big Sioux rivers, whose advance was retarded where preglacial hills (outliers of Cretaceous and Tertiary strata) stood in its way; here the moraine rises in an interlobate upland which terminates inward (towards the glaciated area) in a strong cusp, as in Turtle and Turkey hills; the rim of the upland is incised by broad channels of glacial waters which flowed from the ice, and the axis of the upland is trenched by the trunk stream that resulted from the confluence of these ice-water branches. The broad lobate glacier seems to have invaded the preglacial course of the Missouri, which therefore rose as a lake (Old Red lake) just above the entrance of White river from the western plains; the lake level being recorded by a large delta built by this river. The outlet of the lake was along the southwestern margin of the ice where a new channel has been cut from the mouth of White river to that of Niobrara river. At a later stage, a second moraine (Gary) was formed around a reduced ice lobe, whose area is roughly marked by the space between the James and Vermillion rivers. The floor of the ice lobes is now a smoothly undulating plain of till or silt, free from buttes and incised by narrow stream channels.

BULLETIN OF THE AMERICAN BUREAU OF GEOGRAPHY.

E. M. LEHNERTS, of the State Normal School, Winona, Minn., with nine associate editors, has lately issued the first number of a quarterly bulletin with the above title, as an aid to the teaching of school geography. A report of a committee on lantern slides, illustrated with small prints of thirty views, is the most original feature of the issue, which is otherwise largely occupied with general articles on time-honored subjects. Four writers treat of the 'Educational value of geography,' 'What to teach in geography,' 'Geography as a basis for correlation' and 'Concrete geography.' Physiography has four articles by Collie, Tarr, Kümmel and Moore, containing some specific suggestions regarding equipment and some illustrative examples, along with generalities. An article on a special topic, the 'Points of the Compass,' is at fault in neglecting the sun's noon culmination as the simplest means of determining the local meridian and the cardinal points, and in asserting that "the north star is thus the only satisfactory, because the only fundamental starting point for determining direction." A committee on exchange of products, with Philip Emerson of Lynn, Mass., as chairman, promises to be a practical aid to isolated teachers.

W. M. DAVIS.

THE STUDY OF ELECTRICAL PRESSURE.

PROFESSOR JOHN TROWBRIDGE, of Harvard University, contributes the following account of his work on electricity to the *Harvard Graduate Magazine:*

The remarkable development of the practical employment of electrical phenomena has put physical laboratories at a certain disadvantage; for the electrical engineer and the assistants in the great electrical companies have it in their power to experiment with electrical currents of far greater strength than it is possible to obtain in a university laboratory. While the college professor might perhaps employ a hundred horse-power and its equivalent in electrical energy, the electrical engineer has at his command many thousand horse-power. He can study the effect of tremendous currents in breaking up chemical compounds and in forming new compounds. He can investigate the phenomena of electro-magnetism on a great scale. There is, however, one field in which the college professor can enter the electrical field on more than equal terms as regards